Bootstat 2021: Conformal bootstrap and statistical models



lundi 3 mai 2021 - vendredi 28 mai 2021 Institut Pascal, Orsay, France & amp; online

Programme Scientifique

Asterisks* mark talks for which slides or other materials are available. (Click on the talk title.) Recordings of all the talks are available at that page.

Multi-week activities

Tutorial: Numerical bootcamp*, supervised by Marten Reehorst (4 sessions in Weeks 1, 2)

1. Status of the conformal bootstrap

Introduction to the numerical conformal bootstrap*, by Alessandro Vichi (4 lectures) Applications of the numerical conformal bootstrap*, by David Poland The navigator function : sailing through the infeasible sea in the conformal bootstrap*, by Ning Su Critical Ising Model in Varying Dimension by Conformal Bootstrap*, by Andrea Cappelli Critical geometry approach to three-dimensional percolation*, by Alessandro Galvani Discussion on Non-relativistic conformal symmetries*, with Malte Henkel

2. Statistical physics targets

Random critical points: Anderson transitions, multifractality, and conformal symmetry*, by Ilya Gruzberg (4 lectures)

Upper critical dimension of the 3-state Potts model*, by Shai Chester

Geometrical correlators in 2d CFTs: an introduction with some open problems*, by Jacopo Viti

Four-point cluster connectivities in the 2d critical Q-state Potts model*, by Yifei He

Conformal field theory of the integer quantum Hall transition: a status report*, by Martin Zirnbauer

Discussion on Analytically soving the Ising model in \$2 + \epsilon\$ dimensions*, with Wenliang Li Discussion on The 3d Ising CFT spectrum*, with Slava Rychkov

3. Structural phase transitions and other unitary problems

Basics of symmetry in condensed matter physics*, by Sylvain Ravy

Introduction to structural phase transitions*, by Pierre Toledano (3 lectures)

Critical behavior near structural phase transitions*, by Amnon Aharony (2 lectures)

Conformal bootstrap studies of puzzles in critical phenomena*, by Andreas Stergiou

RG Flows in Coupled Replica CFTs*, by Hirohiko Shimada

Discussion on Interchiral algebra from the affine Temperley-Lieb algebra*, with Azat Gainutdinov Discussion on Four-point functions for non-unitary geometrical problems in two dimensions, with Hubert Saleur

The random field Ising model*, by Silvio Franz, Marco Picco and Emilio Trevisani (2 lectures)

4. Non-unitary bootstrap methods

The crossing equations without positivity: tools and challenges*, by Marco Meineri (2 lectures) Critical exponents from the Lorentzian inversion formula*, by Johan Henriksson Operator expansions, layer susceptibility and two-point functions in BCFT*, by Mykola Shpot How can the pertubative renormalization group help the bootstrap?*, by Kay Wiese

Discussion on Unitarity versus positivity*, with Connor Behan Discussion on Conformal Field Theories near an Edge*, with António Antunes Extremal flows for the non-positive bootstrap?*, by Miguel Paulos